

Application S.N. 10/023,333

Date June 22, 2007

Reply to Office Action dated May 22, 2007

JUN 22 2007

Page 2 of 7

SUMMARY OF THE CLAIMED SUBJECT MATTER (CORRECTED)

Claim 1 recites an apparatus for dispensing a viscous material C comprising: a tubular nozzle member 24 having one end 24a for receiving viscous material A,B for passage through the nozzle member 24, a nozzle tip portion 24b having an inwardly extending annular shoulder 24d with an inner conical nozzle surface 24e extending from the annular shoulder 24d toward an opposite end of the nozzle member 24, and an axially extending main body tubular portion interconnecting the one end 24a and the nozzle tip portion 24b, the tubular nozzle member 24 having an external surface with radially inwardly stepped reductions 24c in dimension approaching an end of the nozzle tip portion 24b providing guides for selectively cutting variable discharge opening sizes; and a nozzle insert 16 having an outwardly extending annular flange 16b adjacent a first end and a conical external surface extending toward a second end 16c, the annular flange 16b of the nozzle insert 16 engageable against the annular shoulder 24d within the tubular nozzle member 24 proximate the nozzle tip portion 24b of the nozzle member 24 and operative for discharging viscous material C. (Figures 8 and 9; Paragraph [0026], lines 4-8; Paragraph [0027], lines 1-9; Paragraph [0031], lines 6-8; Paragraph [0033], lines 1-9; and Paragraph [0034.1], lines 1-6).

Claim 2 recites the apparatus of claim 1, wherein the nozzle insert 16 further comprises an interchangeable tip insert 16 insertable into the tubular nozzle member 24, said tip insert 16 having a smaller end aperture than the nozzle tip portion 24b and extending beyond an end of the nozzle tip portion 24b of the tubular nozzle member 24. (Figure 8; and Paragraph [0034.1], lines 6-12).

Claim 3 recites the apparatus of claim 2, wherein the tip insert 16 has an inner surface 24e with an entry point having an angular cut funnel shaped surface portion and a cylindrical surface portion. (Figure 8; and Paragraph [0034.1], lines 15-21).

Claim 4 recites an apparatus for dispensing a viscous material C comprising: a hollow tubular housing 24 having a first end and a second end for carrying viscous material A,B therebetween, and a nozzle-retaining annular shoulder surface 24d adjacent one end 24a of the tubular housing 24; and a nozzle insert 16

Application S.N. 10/023,333

Date June 22, 2007

Reply to Office Action dated May 22, 2007

Page 3 of 7

engagable with the nozzle-retaining annular shoulder surface 24d within the tubular housing 24, the nozzle insert 16 having a non-linear axially extending inner surface 24e defining a passage therethrough with an aperture of reduced dimension adjacent an outlet end for discharging a viscous material C from the tubular housing 24 through the nozzle insert 16. (Figures 8 and 9; Paragraph [0026], lines 4-8; Paragraph [0027], lines 1-9; Paragraph [0031], lines 6-8; Paragraph [0033], lines 1-9; and Paragraph [0034.1], lines 1-12).

Claim 5 recites the apparatus of claim 4 further comprising: the nozzle insert 16 having a first aperture at one end and a second aperture at another end, wherein the first aperture is larger than the second aperture and is disposed opposite from the nozzle-retaining surface 24d of the tubular housing 24, and a cylindrical passage portion adjacent the second aperture. (Figure 8; and Paragraph [0034.1], lines 6-13).

Claim 6 recites the apparatus of claim 4 further comprising: a static mixer 14,26,28 operably insertable within the hollow tubular housing 24 for trapping the nozzle insert 16 against the nozzle-retaining surface 24d. (Figures 8 and 9; Paragraph [0026], lines 1-4; Paragraph [0031], lines 6-8; and Paragraph [0034.1], lines 13-15).

Claim 8 recites the apparatus of claim 4 further comprising: the nozzle insert 16 having an inner surface 24e with a beveled-angular cut adjacent a first end and having a cylindrical surface portion extending longitudinally at least partially between the first end and a second end 16c of the nozzle insert 16. (Figure 8; and Paragraph [0034.1], lines 15-21).

Claim 9 recites an apparatus for dispensing a viscous material C comprising: a hollow tubular housing 24 having a first end and a second end for carrying viscous material A,B therebetween, and a nozzle-retaining annular shoulder surface 24d extending radially inwardly adjacent one end 24a of the tubular housing 24; and a nozzle insert 16 having a radially outwardly extending annular flange 16b adjacent a first end, the radially outwardly extending annular flange 16b engagable with the nozzle-retaining annular shoulder surface 24d within the tubular housing 24, the nozzle insert 16 for discharging a viscous material C from the tubular

Application S.N. 10/023,333
Date June 22, 2007
Reply to Office Action dated May 22, 2007

Page 4 of 7

housing 24 through the nozzle insert 16. (Figures 8 and 9; Paragraph [0026], lines 4-8; Paragraph [0027], lines 1-9; Paragraph [0031], lines 6-8; Paragraph [0033], lines 1-9; and Paragraph [0034.1], lines 1-6).

Claim 10 recites the apparatus of claim 9 further comprising: the nozzle insert 16 having a first aperture at one end and a second aperture at another end, wherein the first aperture is larger than the second aperture and is disposed opposite from the nozzle-retaining surface 24d of the tubular housing 24, and a cylindrical passage portion adjacent the second aperture. (Figure 8; and Paragraph [0034.1], lines 6-13).

Claim 11 recites the apparatus of claim 9 further comprising: a static mixer 14,26,28 operably insertable within the hollow tubular housing 24 and engageable with the radially outwardly extending annular flange 16b of the nozzle insert 16 for trapping the nozzle insert 16 against the nozzle-retaining surface 24d. (Figure 9; Paragraph [0026], lines 1-4; Paragraph [0031], lines 6-8; and Paragraph [0034.1], lines 13-15).

Claim 12 recites the apparatus of claim 9 further comprising: the nozzle insert 16 having at least a cylindrical surface portion of a passage extending axially therethrough with a first opening adjacent one end larger than a second opening adjacent an opposite end, and the nozzle insert 16 extending beyond the one end 24a of the tubular housing 24. (Figure 8; and Paragraph [0034.1], lines 6-13).

Claim 13 recites the apparatus of claim 9 further comprising: the nozzle insert 16 having an inner passage with a beveled-angular cut surface adjacent a first end and having a cylindrical portion extending at least partially between the first end and a second end 16c of the nozzle insert 16. (Figure 8; and Paragraph [0034.1], lines 15-21).

Claim 14 recites an apparatus for dispensing a viscous material C comprising: a tubular member 24 having first and second ends, the second end having an internal insert-retaining annular shoulder surface 24d, and an axially extending portion of the tubular member 24 interconnecting said first and second ends; and a nozzle insert 16 engageable within the second end of the tubular member 24 and having an outwardly extending annular flange 16b engageable with the

Application S.N. 10/023,333
Date June 22, 2007
Reply to Office Action dated May 22, 2007

Page 5 of 7

annular shoulder 24d within the tubular member 24, the nozzle insert 16 extending outwardly beyond the second end of the tubular member 24 for discharging viscous material C. (Figures 8 and 9; Paragraph [0026], lines 4-8; Paragraph [0027], lines 1-9; Paragraph [0031], lines 6-8; Paragraph [0033], lines 1-9; and Paragraph [0034.1], lines 1-6).

Claim 15 recites the apparatus of claim 14 further comprising the nozzle insert 16 being an interchangeable insert 16 positionable within the second end of the tubular member 24 against the internal inserting-retaining surface 24d, the insert 16 having a smaller aperture at an outer end than the second end of the tubular member 24. (Figure 8; and Paragraph [0034.1], lines 6-12).

Claim 16 recites the apparatus of claim 14 further comprising the nozzle insert 16 having an axially extending passage therethrough, an entry portion of the passage having an angular surface in communication with a cylindrical surface extending along at least a portion of the passage. (Figure 8; and Paragraph [0034.1], lines 15-21).

Claim 17 recites the apparatus of claim 14 further comprising: the nozzle insert 16 having a first aperture at one end and a second aperture at another end, wherein the first aperture is larger than the second aperture and is disposed opposite from the insert-retaining surface of the tubular member 24. (Figure 8; and Paragraph [0034.1], lines 6-12).

Claim 18 recites the apparatus of claim 14 further comprising: a static mixer 14,26,28 operably insertable within the tubular member 24 for trapping the nozzle insert 16 against the internal insert-retaining surface 24d. (Figure 9; Paragraph [0026], lines 1-4; Paragraph [0031], lines 6-8; and Paragraph [0034.1], lines 13-15).

Claim 20 recites the apparatus of claim 14 further comprising: the nozzle insert 16 having an inner passage with a beveled-angular cut portion adjacent a first end and having a cylindrical portion extending along at least partially between the first end and a second end 16c of the nozzle insert 16. (Figure 8; and Paragraph [0034.1], lines 6-13).

Claim 21 recites the apparatus of claim 4 further comprising the

Application S.N. 10/023,333
Date June 22, 2007
Reply to Office Action dated May 22, 2007

Page 6 of 7

nozzle insert 16 being an interchangeable insert 16 positionable within the second end of the tubular member 24 against the nozzle-retaining annular shoulder surface 24d, the insert 16 having a smaller aperture at an outer end than the second end of the tubular member 24. (Figure 8; and Paragraph [0034.1], lines 6-12).

Claim 22 recites the apparatus of claim 9 further comprising the nozzle insert 16 being an interchangeable insert 16 positionable within the second end of the tubular member 24 against the nozzle-retaining annular shoulder surface 24d, the insert having a smaller aperture at an outer end than the second end of the tubular member 24. (Figure 8; and Paragraph [0034.1], lines 6-12).